IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for partially oxidizing propene to acrolein in the gas phase under heterogeneous catalysis by conducting a starting reaction gas mixture comprising propene, molecular oxygen and at least one inert gas, and containing the molecular oxygen and the propene in a molar O2:C3H6 ratio of ≥1, in one reaction stage over a fixed catalyst bed which is arranged in two spatially successive reaction zones A, B, the temperature of reaction zone A being a temperature in the range from 290 to 380°C and the temperature of reaction zone B likewise being a temperature in the range from 290 to 380°C, and whose active composition is at least one multimetal oxide comprising the elements Mo, Fe and Bi, in such a way that reaction zone A extends up to a conversion of propene of from 40 to 80 mol% and, on single pass of the starting reaction gas mixture through the entire fixed catalyst bed, the propene conversion is [[>]] ≥ 90 mol% and the selectivity of acrolein formation, based on converted propene, is [[>]] ≥ 90 mol%, the chronological sequence in which the starting reaction gas mixture flows through the reaction zones corresponding to the alphabetic sequence of the reaction zones, wherein

a) the hourly space velocity of the propene contained in the starting reaction gas mixture on the fixed catalyst bed is < 160 l (STP) of propene/l of fixed catalyst bed•h and [[>]] ≥ 90 l (STP) of propene/l of fixed catalyst bed•h,

b) the volume-specific activity of the fixed catalyst bed is either constant or increases at least once in the flow direction of the reaction gas mixture over the fixed catalyst bed, and

c) the difference $T^{maxA} - T^{maxB}$, formed from the highest temperature T^{maxA} which the reaction gas mixture has within reaction zone A and the highest temperature T^{maxB} which the reaction gas mixture has within reaction zone B, is ≥ 0°C.

Claim 2 (Previously Presented): The process as claimed in claim 1, wherein the difference $T^{maxA} - T^{maxB}$ is ≥ 0°C and ≤ 80°C.

Claim 3 (Previously Presented): The process as claimed in claim 1, wherein the difference $T^{maxA} - T^{maxB}$ is ≥ 3°C and ≤ 70°C.

Claim 4 (Previously Presented): The process as claimed in claim 1, wherein the difference $T^{maxA} - T^{maxB}$ is ≥ 20°C and ≤ 60°C.

Claim 5 (Previously Presented): The process as claimed in claim 1, wherein the hourly space velocity of the propene contained in the starting reaction gas mixture on the fixed catalyst bed is ≥ 90 l (STP) of propene/l•h and ≤ 155 l (STP) of propene/l•h.

Claim 6 (Previously Presented): The process as claimed in claim 1, wherein the hourly space velocity of the propene contained in the starting reaction gas mixture on the fixed catalyst bed is ≥ 100 l (STP) of propene/l•h and ≤ 150 l (STP) of propene/l•h.

Claim 7 (Previously Presented): The process as claimed in claim 1, wherein the active composition of the fixed catalyst bed is at least one multimetal oxide of the general formula I

$$Mo_{12}Bi_aFe_bX^1{}_cX^2{}_dX^3{}_eX^4{}_fO_n \quad (I)$$

wherein the variables are defined as follows:

X^1 = nickel and/or cobalt,

X^2 = thallium, an alkali metal and/or an alkaline earth metal,

X^3 = zinc, phosphorus, arsenic, boron, antimony, tin, cerium, lead and/or

tungsten,

X^4 = silicon, aluminum, titanium and/or zirconium,

a = from 0.5 to 5,

b = from 0.01 to 5,

c = from 0 to 10,

d = from 0 to 2,

e = from 0 to 8,

f = from 0 to 10 and

n = a number which is determined by the valency and frequency of the elements other than oxygen in I.

Claim 8 (Previously Presented): The process as claimed in claim 1, wherein the volume-specific activity of the fixed catalyst bed increases at least once.

Claim 9 (Previously Presented): The process as claimed in claim 7, wherein:

b = from 2 to 4,

c = from 3 to 10,

d = from 0.02 to 2, and

e = from 0 to 5.

Claim 10 (Currently Amended): The process of claim 1, wherein the hourly space velocity of the propene in the starting gas mixture on the fixed catalyst bed is from ~~greater than~~ 90 l (STP) of propene/l of fixed catalyst bed•h to 150 l (STP) of propene/l of fixed catalyst bed•h.

Claim 11 (Previously Presented): The process of claim 1, wherein the temperature of reaction zone A is from 290 to 327°C and the temperature of reaction zone B is from 290 to 313°C.

Claim 12 (Previously Presented): The process of claim 1, wherein the temperature of reaction zone A is from 319 to 327°C and the temperature of reaction zone B is from 313 to 319°C.

Claim 13 (Previously Presented): The process of claim 1, wherein the temperature of reaction zone A is from 310 to 340°C.

Claim 14 (Previously Presented): The process of claim 1, wherein the propene conversion in reaction zone A is from 50 to 70 mol%.

Claim 15 (Previously Presented): The process of claim 1, further comprising:

cooling the reaction gas mixture after the reaction gas mixture has been conducted over the fixed catalyst bed having reaction zones A and B.

Claim 16 (Previously Presented): The process of claim 1, wherein the starting reaction gas mixture comprises from 6 to 15% by volume of propene, from 4 to 20% by volume of water, and from 0 to 10% by volume of constituents other than propene, water, oxygen and nitrogen.

Claim 17 (Previously Presented): The process of claim 1, wherein the starting reaction gas mixture comprises from 7 to 11% by volume of propene, from 6 to 12% by

volume of water, and from 0 to 5% by volume of constituents other than propene, water, oxygen and nitrogen.

Claim 18 (Previously Presented): The process of claim 1, wherein the reaction stage is a two-zone tube bundle reactor.

Claim 19 (Previously Presented): The process of claim 1, wherein the starting reaction gas mixture comprises at least one inert gas selected from the group consisting of molecular nitrogen, propane, ethane, methane, pentane, butane, CO_2, CO, steam and mixtures thereof.

Claim 20 (Previously Presented): The process of claim 1, further comprising:

passing the gas mixture through a downstream acrolein oxidation stage after passing the starting reaction gas mixture through the entire fixed catalyst bed.